



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,946	05/31/2005	Ramkishore Ganti	FIS920020099	6575
23122	7590	04/03/2006	EXAMINER	
RATNERPRESTIA			WILLIAMS, LAWRENCE B	
P O BOX 980			ART UNIT	
VALLEY FORGE, PA 19482-0980			PAPER NUMBER	
			2611	

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/536,946

Applicant(s)

GANTI ET AL.

Examiner

Lawrence B. Williams

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph. Claim 1 recites the limitation "the ratio" in line 31. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 1 recites the limitation "the product" in line 35. There is insufficient antecedent basis for this limitation in the claim.

6. Claims 7-10 are rejected under 35 U.S.C. 112, second paragraph. Claim 7 recites the limitation "the ratio" in line 28. There is insufficient antecedent basis for this limitation in the claim.

Allowable Subject Matter

7. Claims 1-10 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

8. The following is a statement of reasons for the indication of allowable subject matter:

The instant application discloses a bandpass delta sigma truncator and method. A search of prior art records has failed to disclose a bandpass delta sigma truncator comprising: "output means for supplying from a series of third multi-bit digital signals each individually associated with one of the second multi-bit digital signals and each having the same number of data bits as in an associated second multi-bit digital signal: (a) a series of fourth multi-bit digital signals each having a selected number of the most significant data bits of the third multi-bit digital signals, and (b) a series of fifth multi-bit digital signals each having the remaining number of the least significant data bits of the third multi-bit digital signals; means for: (a) delaying by a period of time equal to the time between successive first multi-bit digital signals each of the fifth multi-bit digital signals, and (b) delaying by a period of time equal to twice the time between successive first multi-bit digital signals each of the fifth multi-bit digital signals and Inverting the fifth multi-bit digital signals that have been delayed by a period of time equal to twice the time between successive first multi-bit digital signals; means for multiplying by a multiplier number related to the ratio of a selected frequency to the frequency of the first multi-bit digital signals each of the fifth multi-bit digital signals delayed by a period of time equal to the time between successive first multi-bit digital signals and developing a series of sixth multi-bit digital signal:

Art Unit: 2611

having a number of data bits that is the product of the multiplier number and the number of data bits in the fifth multi-bit digital signals” along with the remaining limitations of claim 1.

Nor does the prior art teach a method for truncating a multi-bit digital signal comprising the steps of: “sign extending each of the first multi-bit digital signals to a second multi-bit digital signal having: (a) the same number of data bits as the number of data bits in the first multi-bit digital signals, and (b) a second number of sign bits; adding to each second multi-bit digital signal to develop a series of third multi-bit digital signals each individually associated with one of the second multi-bit digital signals and each having the same number of data bits as in an associated second multi-bit digital signal: (a) a multi-bit digital signal that has been: (1) developed from a selected number of the least significant bits of the third multi-bit digital signals” along with the remaining limitations of claim 7.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Greggain et al. discloses in US Patent 5,559,905 Digital Image Resizing Apparatus.

b.) Chen et al. discloses in US Patent 6,304,608 B1 Multibit Sigma-Delta Converters Employing Dynamic Element Matching With Reduced Baseband Tones.

c.) Barnette discloses in US Patent 6,970,511 B1 Interpolator, A Resampler Employing The Interpolator And Method Of Interpolating A Signal Associated Therewith.

d.) Kerth et al. discloses in US Patent 5,644,308 Algorithmic Analog-To-Digital Converter Having Redundancy And digital Calibration.

Art Unit: 2611

e.) Ribner discloses in US Patent 5,181,032 High-Order, Plura-Bit-Quantization Sigma-Delta Modulators Using Single-Bit Digital-To-Analog Conversion Feedback.

f.) Gabet et al. discloses in US Patent 6,075,474 Device For The Generation Of Analog Signals Through Digital-Analog Converters, Especially For Direct Digital Synthesis.

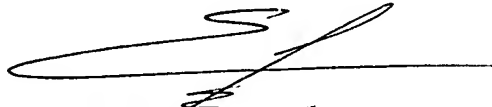
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw
March 28, 2006



EMMANUEL BAYARD
PRIMARY EXAMINER